

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:
Dettinger et al.

Serial No.: 10/691,415

Filed: 10/22/03

For: CONTEXT SENSITIVE TERM
EXPANSION WITH DYNAMIC
TERM EXPANSION

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Confirmation No.: 6177

Group Art Unit: 2166

Examiner: Emeka Ebirim

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
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May 29, 2007	/Jon K. Stewart, Reg. No. 54,945/
Date	Jon K. Stewart

Dear Sir:

APPEAL BRIEF

Applicants submit this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 2166 dated October 19, 2006, finally rejecting claims 1-14 and 18-22. The final rejection of claims 1-14 and 18-22 is appealed. This Appeal Brief is believed to be timely since it is electronically transmitted by the due date of May 29, 2007, as set by the filing of a Notice of Appeal on March 27, 2007. Please charge the fee of \$500.00 for filing this brief to Deposit Account No. 09-0465/ROC920030261US1.

TABLE OF CONTENTS

1.	Identification Page.....	1
2.	Table of Contents	2
3.	Real Party in Interest	3
4.	Related Appeals and Interferences	4
5.	Status of Claims	5
6.	Status of Amendments	6
7.	Summary of Claimed Subject Matter	7
8.	Grounds of Rejection to be Reviewed on Appeal	9
9.	Arguments	10
10.	Conclusion	16
11.	Claims Appendix	17
12.	Evidence Appendix	21
13.	Related Proceedings Appendix	22

Real Party in Interest

The present application has been assigned to International Business Machines Corporation, Armonk, New York.

Related Appeals and Interferences

Applicant asserts that no other appeals or interferences are known to the Applicant, the Applicant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 1-14 and 18-22 are pending in the application. Claims 1-25 were originally presented in the application. Claims 15-17 and 23-25 have been canceled without prejudice. Claims 1-14 and 18-22 stand finally rejected as discussed below. The final rejections of claims 1-14 and 18-22 are appealed. The pending claims are shown in the attached Claims Appendix.

Status of Amendments

All claim amendments have been entered by the Examiner, including amendments to the claims proposed after the final rejection.

Summary of Claimed Subject Matter

Claimed embodiments include methods (see claims 1-4 and 5-14) and computer programs stored on computer readable storage media (see claims 18-22) directed to searching fields of a data repository using dynamic term expansion.

CLAIM 1 - INDEPENDENT

Claim 1 recites a method of searching fields of a data repository using dynamic term expansion. See *Application*, Abstract, 1:16-18, 3:19-27, 6:20-30, 13:30-32 – 14:1-2, and Figure 3A. This method includes obtaining a query containing at least one condition for searching at least one field of the data repository. See *Application*, 16:1-3, Figure 3A, 302. As claimed, the at least one condition includes at least one base search term. See *Application*, 16:3-6, Figure 3A, 304 and 306. This method also includes identifying a set of expanded terms associated with the base search term. See *Application*, 16:6-20, Figure 3A, 308 and 310, 17:29-31, 18:1-9, Figure 3B. This method also includes generating a pointer to the identified set of expanded search terms. See *Application*, 21:9-22. This method also includes storing the query and information related to the pointer. See *Application*, 17:23-27, 20:26-30, and 21:9-22. This method also includes, prior to executing the query, retrieving the query and the information related to the pointer and modifying the query to contain one or more conditions based on one or more expanded search terms retrieved using the pointer. See, *Application*, 17:23-27, Figure 3A, 312.

CLAIM 5 – INDEPENDENT

Claim 5 recites a method of searching fields of a data repository using state-sensitive term expansion. See *Application*, Abstract 1:16-18, 3:29-32 – 4:1-5, 16:24-31, 17:1-12, and Figure 3A. This method includes receiving, from a user, a query containing at least one condition for searching at least one field of the data repository. See *Application*, 16:1-3, Figure 3A, 302. As claimed, the at least one condition includes at least one base search term. See *Application*, 16:3-6, Figure 3A, 304 and 306. This method also includes obtaining one or more parameters indicative of a state of an environment in which the query is to be executed. See *Application*, 16:24-31, 17:1-12.

This method also includes obtaining, based on the one or more parameters and the base search term, one or more expanded search terms. See *Application*, 16:6-20, Figure 3A, 308 and 310, 17:29-31, 18:1-9, Figure 3B. This method also includes modifying the query to contain one or more conditions based on the one or more expanded search terms. See, *Application*, 17:23-27, Figure 3A, 312.

CLAIM 18 - INDEPENDENT

Another claimed embodiment includes a computer-readable storage medium containing a program for searching fields of a data repository using dynamic term expansion which, when executed, performs operations. See *Application*, Abstract, 1:16-18, 4:18-30, See, *Application*, 17:23-27, Figure 3A, 312. The operations include providing a first interface allowing a user to build and save a query containing at least one condition for searching at least one field of the data repository. See *Application*, 16:1-3, 19:13-19, Figure 3A, 302, Figure 5A. As claimed, the at least one condition includes at least one base search term. See *Application*, 16:3-6, Figure 3A, 304 and 306. The operations also include providing a second interface allowing the user to specify a set of expanded search terms to be associated with the at least one base search term and further allowing the user to specify whether the set of expanded search terms should be dynamically linked with the query via a pointer used to identify a source of the set of expanded search terms. See *Application*, 16:6-20, Figure 3A, 308 and 310, 17:29-31, 18:1-9, Figure 3B, 19:21-31, 20:1-22, Figure 5B. The operations also include providing a runtime component configured to retrieve a saved query and modify the saved query to contain one or more conditions including a specified set of expanded search terms retrieved using the pointer. See *Application*, 20:26-34, 21:1-22, Figure 2A, 150, 17:23-27, Figure 3A, 312.

Grounds of Rejection to be Reviewed on Appeal

1. Rejection of claims 1-3 under 35 U.S.C. 102(b) as being anticipated by *Wical* (U.S. Patent No. 5,940,821).
2. Rejection of claims 18-22 under 35 U.S.C. 102(b) as being anticipated by *Getchius* (U.S. Patent No. 6,493,721).
3. Rejection of claims 4-14 under 35 U.S.C. 103(a) as being unpatentable over *Wical* in view of *Getchius*.

ARGUMENTS

Rejections under 35 U.S.C. § 102

***Wical* Does Not Anticipate Claims 1-3 under 35 U.S.C. § 102(b)**

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicants submit that *Wical* does not disclose a method of searching fields of a data repository using dynamic term expansion that includes generating a pointer to an identified set of expanded search terms. As claimed, the "expanded set of search terms" is identified on the basis of a "base search term" included in a query of the data repository. The Examiner suggests that *Wical* discloses this limitation at 11:41-45, 11:62-67, and 12:34-35. In fact, however, these three passages generically describe a "knowledge base." As disclosed in *Wical*, the knowledge base provides information used to identify "topics" and "genres" that may be related to a search term included in a word search. For example, *Wical* describes the "knowledge base" as follows:

The knowledge base reflects the context of certain terminology by associating terms with categories based on the use of the terms in documents. For the above example about wine making, the term "barrel fermented" may be associated with the category "wines."

Wical, 4:54-58. As discussed in *Wical*, the relationships between terms, topics, and genres reflected in the "knowledge base" exist independently from any particular search request submitted by a user. Further, the "topics" or "categories" do not provide an "expanded set of search terms" used to search the fields of a data repository.

Additionally, nothing in *Wical* discloses limitation of “generating a pointer to an identified set of expanded search terms,” as recited by Claim 1. As claimed, the “expanded set of search terms” are related to a specific query. In contrast, the material cited by the Examiner describes the generic relationships between “categories,” “classifications,” and “topics” in the “knowledge base.” These passages provide:

The knowledge base 155 contains classification categories or topics, such as the knowledge catalog 150, augmented with additional terminology including cross references and links among terminology/categories. FIG. 4 illustrates an example portion of a knowledge base augmented to include additional terminology as well as cross references and links among categories and terms. ...

The knowledge base 155 is augmented to include linking and cross referencing among categories for which a linguistic, semantic, or usage association has been identified. For the example illustrated in FIG. 4, the categories "France", "art galleries and museums", and "places of interest" are cross referenced and/or linked as indicated by the circles, which encompass the category names, as well as the lines and arrows. ...

The second type of association in the knowledge base, links, are generated through processing documents.

See *Application*, 11:41-45, 11:62-67, and 12:34-35. Clearly, nothing in this passage describes “generating a pointer to the identified set of expanded search terms.” Instead, the passages describe the general internal structure of the “knowledge base,” and how it may be used to identify relationships “categories,” “classifications,” and “topics.”

Lastly, Applicants submit that *Wical* does not disclose a method of searching fields of a data repository using dynamic term expansion that includes modifying the query to contain one or more conditions based on one or more expanded search terms. As discussed, *Wical* discloses receiving a keyword (or keywords) and identifying related categories and topics from the “knowledge base.” Items in the “knowledge base” may include links to related categories using a directed graph structure. However, Applicants claim recites “modifying the query to contain one or more conditions based on one or more expanded search terms retrieved using the pointer.” That is, the pointer references a specific set of “expanded search terms” related to a specific query.

Applicants submit that the generic relationships between “topics” and “categories” in the “knowledge base” do not to disclose this limitation recited by claim 1.

Nevertheless, the Examiner suggests that *Wical*, Fig 7, 17:62-65, 18:1-16. However, put simply, the cited passages describe a “query in, results out” processing sequence. For example, one of the cited passages provides:

As shown in FIG. 1, the search and retrieval system 100 includes query processing 175. The query processing 175 receives, as input, user queries, and generates, as output, responses to queries based on the mode of operation. The query processing 175 accesses documents 130, document theme vector 160, and knowledge base 155 to formulate a response to the user query.

Wical, 17:62-65. No modification to a query, based on a pointer generated for that query that identifies an extended set of search, or otherwise, is disclosed.

Accordingly, based on the foregoing, Applicants submit that *Wical* does not disclose a method of searching fields of a data repository using dynamic term expansion, as recited by claims 1-3. Therefore, Applicants respectfully request that this rejection be withdrawn.

***Getchius* Does Not Anticipate Claims 18-22 under 35 U.S.C. § 102(b)**

Applicants submit that *Getchius* does not disclose a computer-readable storage medium containing a program for searching fields of a data repository using dynamic term expansion, where, among other things, the program is configured to provide a second interface allowing the user to specify a set of expanded search terms to be associated with the at least one base search term and further allowing the user to specify whether the set of expanded search terms should be dynamically linked with the query via a pointer used to identify a source of the set of expanded search terms.

Regarding this limitation, the Examiner suggests that *Getchius* discloses this limitation at 64:15-20, Fig 3, 43, 44, 9-15. The cited passage provides as follows:

For example, if the user enters a query for "art supplies," as depicted in FIG. 43, the user might retrieve a list of matching categories, such as the

eight matching categories depicted in FIG. 44. In an embodiment, the categories are those that were displayed as a results page in the flow chart 88 at the step 102 in FIG. 41.

Getchius, 64:15-20. While this passage, and associated figures, may illustrate a user selecting items from a tree hierarchy, nothing in the cited material shows an interface “allowing the user to specify whether the set of expanded search terms should be dynamically linked with the query via a pointer used to identify a source of the set of expanded search.” For example, the Examiner relies on the “art supplies” category shown in Figure 43. Figure 44 includes a list of categories related to, or refining, the term “art supplies, including, “art goods” “art supplies,” “arts & crafts,” “craft supplies,” “handicraft supplies” along with a number of businesses in a listing related to the initial category of “art supplies.” Importantly, nothing in the interface illustrated in Figures allows a user “to specify whether the set of expanded search terms should be dynamically linked with the query via a pointer used to identify a source of the set of expanded search.” Further, for the reasons presented above regarding claim 1, Applicants submit that *Wical* does not disclose “a runtime component configured to ... modify the saved query to contain one or more conditions including a specified set of expanded search terms retrieved using the pointer,” as recited by Claim 18.

Accordingly, based on the foregoing, Applicants submit that *Getchius* does not disclose a computer-readable storage medium containing a program for searching fields of a data repository using dynamic term expansion, as recited by claims 18-22. Therefore, Applicants respectfully request that this rejection be withdrawn.

***Wical*, in View of *Getchius*, Does Not Render 4-14 Obvious under 35 U.S.C. 103(a)**

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2142. To establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one ordinary skill in the art to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or

references when combined) must teach or suggest all the claim limitations. See MPEP § 2143. The present rejection fails to establish at least the first and third criteria.

Regarding claims 5-14:

Applicants submit that *Wical*, in view of *Getchius*, does not disclose a method of searching fields of a data repository using state-sensitive term expansion. Specifically, *Wical*, in view of *Getchius*, does not disclose a method that includes obtaining one or more parameters indicative of a state of an environment in which the query is to be executed and obtaining, based on one or more parameters and a base search term, one or more expanded search terms, as recited by claim 5. The Examiner concedes that *Wical* does not disclose this limitation, but goes on to suggest that *Getchius* does. Specifically, the Examiner cites to *Getchius*, 5:22-23. Set out more fully, the passage relied on by the Examiner provides:

The process of data integration and updating the data, for example, from the Backoffice to the Front End Server, may be performed at a time other than peak demand time. These processes and data transfer techniques, as will be described in following paragraphs, are generally performed "off-line" and not in response to user query requests. Rather, these techniques may be performed as part of a data maintenance and update process performed in accordance with the system load and the number and type of update transactions.

Getchius, 5:15-24. The passage is directed to a "process of data integration and updating the data." Importantly, by its own terms, these processes are performed "not in response to user query requests." Compare this with the claimed method of searching fields of a data repository using state-sensitive term expansion that includes receiving, from a user, a query ... and obtaining one or more parameters indicative of a state of an environment in which the query is to be executed. Thus, not only does *Getchius* not disclose the limitations recited by claim 5, the passage cited by the Examiner is expressly directed to operations performed while a query system is "off line." Further, for the reasons presented above regarding claim 1, Applicants submit that *Wical* does not disclose "modifying the query to contain one or more conditions based on the one or more expanded search terms," as recited by Claim 5.

Accordingly, based on the foregoing, Applicants submit that *Wical*, in view of *Getchius*, does not disclose a computer-readable storage medium containing a program for searching fields of a data repository using dynamic term expansion, as recited by claims 5-14. Therefore, Applicants respectfully request that this rejection be withdrawn.

Regarding claim 4:

Applicants believe that the above discussion regarding claim 1 demonstrates that claim 1 is patentable over *Wical*. Thus, Applicants believe a detailed discussion of passages of *Wical*, in view of *Getchius*, cited in regards to dependent claim 4 is unnecessary. Therefore, Applicants respectfully request that this rejection be withdrawn.

CONCLUSION

The Examiner errs in finding that:

- Claims 1-3 are anticipated by *Wical*
- Claims 18-22 are anticipated by *Getchius*
- Claims 4-14 are unpatentable over *Wical* in view of *Getchius*

Withdrawal of the rejections and allowance of all claims is respectfully requested.

Respectfully submitted, and
S-signed pursuant to 37 CFR 1.4,

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CLAIMS APPENDIX

1. (Original) A method of searching fields of a data repository using dynamic term expansion, comprising:
 - obtaining a query containing at least one condition for searching at least one field of the data repository, wherein the at least one condition includes at least one base search term;
 - identifying a set of expanded terms associated with the base search term;
 - generating a pointer to the identified set of expanded search terms; and
 - storing the query and information related to the pointer; and
 - prior to executing the query, retrieving the query and the information related to the pointer and modifying the query to contain one or more conditions based on one or more expanded search terms retrieved using the pointer.
2. (Original) The method of claim 1, further comprising modifying the identified set of expanded search terms after generating the pointer.
3. (Original) The method of claim 1, further comprising recreating the pointer based on the information related to the pointer.
4. (Original) The method of claim 1, comprising:
 - obtaining one or more parameters indicative of a state of an environment in which the query is to be executed; and
 - identifying a set of expanded terms associated with the base search term based, at least in part, on the one or more parameters.
5. (Original) A method of searching fields of a data repository using state-sensitive term expansion, comprising:
 - receiving, from a user, a query containing at least one condition for searching at least one field of the data repository, wherein the at least one condition includes at least one base search term;

obtaining one or more parameters indicative of a state of an environment in which the query is to be executed;

obtaining, based on the one or more parameters and the base search term, one or more expanded search terms; and

modifying the query to contain one or more conditions based on the one or more expanded search terms.

6. (Original) The method of claim 5, wherein obtaining one or more expanded search terms comprises selecting a set of expanded terms from a plurality of sets of expanded terms, each set corresponding to a different level of expansion.

7. (Original) The method of claim 6, wherein selecting a set of expanded terms from the plurality of sets of expanded terms comprises:

generating a level of expansion based on the one or more parameters; and

selecting a set of expanded search terms corresponding to the generated level of expansion.

8. (Original) The method of claim 5, wherein the one or more parameters comprise at least one parameter indicative of a date or time of day.

9. (Original) The method of claim 8, wherein the at least one parameter indicative of a date or time of day is indicative of when the query is to be executed.

10. (Original) The method of claim 5, wherein the one or more parameters comprise one or more parameters indicative of how heavily one or more system resources are loaded.

11. (Original) The method of claim 5, wherein the one or more parameters comprise one or more credentials of a user issuing the query.

12. (Original) The method of claim 11, wherein, for at least some base search terms, different sets of expanded search terms are obtained for different credentials.

13. (Original) The method of claim 11, wherein the one or more credentials comprise at least one of: an identification of the user, a group to which the user belongs, a role of the user, and a security level of the user.

14. (Original) The method of claim 13, wherein:
the one or more credentials comprises a role of the user; and
obtaining one or more expanded search terms comprises selecting a set of expanded search terms associated with the role of the user.

15-17. (Canceled)

18. (Previously Presented) A computer-readable storage medium containing a program for searching fields of a data repository using dynamic term expansion which, when executed, performs operations comprising:

providing a first interface allowing a user to build and save a query containing at least one condition for searching at least one field of the data repository, wherein the at least one condition includes at least one base search term;

providing a second interface allowing the user to specify a set of expanded search terms to be associated with the at least one base search term and further allowing the user to specify whether the set of expanded search terms should be dynamically linked with the query via a pointer used to identify a source of the set of expanded search terms; and

providing a runtime component configured to retrieve a saved query and modify the saved query to contain one or more conditions including a specified set of expanded search terms retrieved using the pointer.

19. (Previously Presented) The computer-readable storage medium of claim 18, wherein, if the user has specified the set of expanded search terms should be dynamically linked with the query, saving the query comprises saving the query with information associated with the pointer.

20. (Previously Presented) The computer-readable storage medium of claim 19, wherein the runtime component is further configured to recreate the pointer based on the information associated with the pointer.

21. (Previously Presented) The computer-readable storage medium of claim 18, wherein the operations further comprise modifying the set of expanded search terms subsequent to saving the query and prior to obtaining the set of expanded terms using the pointer.

22. (Previously Presented) The computer-readable storage medium of claim 21, wherein the information associated with the pointer comprises a uniform resource locator (URL).

23-25. (Canceled)

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.